

# Early Successional Habitat Development/Management Strip Disking

**Oklahoma Conservation Practices Job Sheet**

**647 01**



## DEFINITION

Strip disking is the light disking of strips of well established grass stands that leaves 50% of the vegetation intact and exposes 50% of the soil surface.

## PURPOSE

Once established, grassland fields need to be managed so that the grasses do not crowd out the forbs and/or legumes over time. In the absence of disturbance, the composition of grassland communities will change over several years through normal plant succession. The vegetative structure changes as annual forbs and legumes are replaced by perennial forbs, grasses, and eventually, woody plants. Changes also occur structurally, as bare ground declines, litter accumulates, and vegetation density increases. These changes lead to a decline in wildlife benefits.

The purpose of management activities like strip disking is to enhance the wildlife habitat value by increasing the amount of bare soil and by encouraging a diverse forb/legume community. Forbs (any broadleaf herbaceous plant) and legumes in grasslands are beneficial to birds, insects such as butterflies, and other wildlife. Strip disking is an efficient and cost-effective disturbance tool that can be utilized where vegetation has become too thick to benefit the target species. Reduced plant residue and bare ground are critical for young chick mobility in grassland areas.

Disturbance is especially helpful for maintaining brood-rearing habitat for bobwhite quail, wild turkey,

ring-necked pheasant and other early successional grassland wildlife species. The insects associated with annual weed communities provide critical nutrients, including protein, and essential amino acids for growing nestlings and chicks. The structural diversity that results from disking also improves habitat for a variety of grassland songbirds, including dickcissels, bobolinks and savannah sparrows. Many of these species have experienced population declines over the last several decades. Disking enhances habitat quality because it inhibits woody growth, promotes favored seed producing plants, reduces plant residue, increases bare ground, and increases insect abundance.

## SPECIFICATIONS

- Use on areas established to grass for at least 3 years where grass stands have become dense and lacking in forb/legume diversity.
- Disk strips 2-4 inches deep to expose approximately 50% bare ground after disking.
- Disk between October 1 and April 15.
- Alternate disked strips of <75 feet in width, with undisturbed strips a minimum of 2 times the disked width, across the field on the contour or across slope.
- Rotate disked and undisked strips on a 3 year or longer rotation.
- Strips shall be disked along field contours as near as practical.



**Light disking favors seed producing plants.**

loss.

- Designated filter strips will be left adjacent to all water bodies to maintain water quality. See NRCS Field Office Technical Guide (FOTG) Standard 393 - Filter Strip for additional guidance.
- Do not disk areas that have been established to vegetation primarily for water quality or erosion control benefits, such as filter strips, riparian buffers, grassed waterways, and contour buffers.

## CONSIDERATIONS

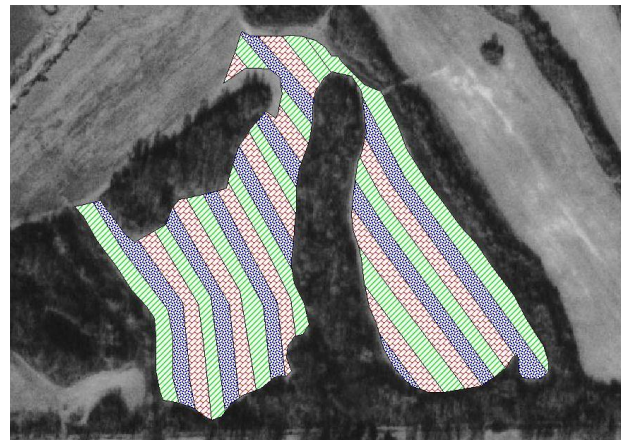
- Strip disking should be planned for the least erosive parts of fields and not in places where gully formation is a problem. CAUTION: Disking in the late fall on highly erosive sites may cause erosion to occur over the winter months. Consider broadcasting  $\frac{1}{2}$  bushel of winter wheat per acre to reduce erosion potential.
- Spot spray or mow areas where noxious or undesirable weeds, such as Musk thistle and Johnsongrass, or other invasive species exist. This will reduce the potential for unintentional establishment of these species by disking.
- Consider the habitat needs of the target wildlife species. Areas disked in early fall will tend to stimulate the production of hard-seeded plants such as common ragweed. These species provide excellent brood-rearing cover and winter food for quail and pheasants. Quail require more open area at ground level than pheasants.
- Consider seeding areas that have been disked to a mixture of forbs and legumes.
- Where the existing vegetation is extremely thick, tall, or rank, consider first using prescribed burns, herbicides, or mowing on those areas where disking will be performed.

Strip disking can be used in combination with prescribed fire to create an even greater diversity of desirable plants. Disked strips can be used as fire breaks. Within a given year, half of the undisked areas between strips can be burned to create a mosaic of annual and perennial, burned and unburned plant communities. Before conducting a prescribed burn obtain an approved prescribed burn plan from a qualified professional.

### EXAMPLE: 3-Year Rotation

Divide the field into adjacent plots that are 90 to 150 feet wide. Within each plot, mark three strips of land that are 30 to 50 feet wide.

1. In fall of the first year of disturbance, within each plot, disk the first strip of land and leave the second and third strip "undisked."
2. In fall of the second year, disk the second strip, leaving the first (disked during previous year) and third strip undisked.
3. In fall of the third year, disk the third strip, leaving the first and second strips undisked.
4. In the fourth year, begin the rotation again, as indicated in the conservation plan.



Example of strip layout in a 3 year rotation.

## OPERATION AND MAINTENANCE

- Control noxious weeds by spot mowing or spot treatment with herbicide.
- Repeat rotation of strip disking when needed to keep 30 to 70 percent annual species in the grass stand and when the vegetation has become too thick for the target wildlife species

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